I. Project Title and Project Purpose Statement

Green Infrastructure Training in West Harlem

GrowNYC proposes to 1) work with community partner Brotherhood Sister Sol to install appropriate green infrastructure projects in community garden sites in order to reduce storm water flows to the combined sewer system, 2) train young people (aprox. age 17-22) from the community in green infrastructure construction, reparation, and maintenance techniques, 3) engage community gardeners and volunteers in the process of building various types of green infrastructure, and 4) educate the larger public through workshops, GrowNYC's online Green Infrastructure toolkit and on-site educational signage paired with visible green infrastructure projects in public spaces (community gardens). Our project will take place in West Harlem, NYC, primarily in zip code 10031. Our work will address the Clean Water Act, particularly training and demonstration. The climate resiliency focus of our project will be localized flooding reduction. In addition to proximal waterway flooding and pollution related to the combined sewer overflow system, West Harlem sits a the top of a large hill, and due to the predominant landscape of non-porous surfaces in Manhattan, water flows down the hill, collecting at points of lower elevation and causing localized, but highly destructive flooding. By increasing the amount of water captured at the higher points of the hill, we will reduce flooding during moderate to heavy rain events, promoting community climate resiliency.

II. Environmental, Public Health and Community Climate Resiliency (if applicable) information about the Affected Community

The primary public health issue we seek to address is combined sewer overflow (CSO) into the waterways of New York City, and the secondary public health issue we seek to address is localized flooding the lower elevation points in Harlem.

CSO, caused by heavy storm water runoff and antiquated systems, is one of NYC and other urban areas' most serious local water pollution problems. Catching and/or filtering rainwater and releasing it slowly back to the earth -- thereby keeping it out of the sewer system -- is vitally important to preserving local water quality. The costs associated with water filtration and watershed protection underscore the need for Green Infrastructure and CSO prevention. GrowNYC and other NYC community garden groups and gardeners are using rainwater harvesting and other types of green infrastructure as a local solution to a global problem.

New York City has a combined sewer system that uses the same pipes to transport household waste and storm water to sewage treatment plants. During rain events (1/20 of an inch would be enough to overwhelm certain parts of NYC's extant system), the system overloads allowing untreated sewage and contaminated storm water to overflow into rivers and estuaries. This overflow can lead to beach closures, restrictions on seafood consumption, stresses on marine ecosystems, and decreased value of coastal property resulting from oil, pesticides, animal waste and litter from lawns, sidewalks, driveways and streets being washed down sewers. This

contamination is called non-point source (NPS) pollution. Keeping rainwater out of NYC sewer systems is vital to the health of our rivers and estuaries.

West Harlem is an area located near a body of water unduly burdened with pollutants. Harlem is one of the poorest, under-resourced neighborhoods in the city, facing some of the highest incidents of diet-related diseases, and classified as a District Public Health Office zone. All the potential site rainwater harvesting system locations are within the New York City's Department of Environmental Conservation's 2013 Green Infrastructure Grant Program Combined Sewer Area Reference Map's (http://www.nyc.gov/html/dep/pdf/green_infrastructure/2013_gi_grant_reference_map.pdf) eligible combined sewer watershed areas. Therefore a green infrastructure project at each site will directly help prevent pollution from entering these watersheds. By working with community groups and volunteers, the community impact deepens as residents become civic leaders and take greater ownership in improving their own communities. They'll also learn about the importance of protecting local water bodies and the role green infrastructure plays in helping accomplish that.

We know that in many cases, those trained by GrowNYC in the past have gone on to build RWH systems of their own. GrowNYC staff has directly built 70 systems. The other 30 systems that we count in community gardens (for a total of 100) have been built with GrowNYC guidance or as a result of GrowNYC training. We further estimate that other New Yorkers with backyards and private spaces, in several cases, have built backyard systems after attending a workshop or downloading pdf how-to's on our website

III. Organization's Historical Connection to the Affected Community 15 points, 1 page

In total to date, GrowNYC has built more 70 rainwater harvesting systems in New York City community gardens, largely in low-income and minority areas. We have worked with communities all over NYC, particularly in low-income areas such as Bed-Stuy, Brownsville, Far Rockaway, the South Bronx, and specific to west Harlem, the Morris – Jumel and Dorothy K. McGowen gardens.

GrowNYC also worked/works in the West Harlem community, proving such services as operating Greenmarkets and a Youthmarket (a teen-run farm stand), building two school gardens, providing textile recycling and compost service, and offering recycling education and outreach.

In New York State, GrowNYC (as part of the Water Resources Group) has taken a leading role in promoting this sustainable practice. The long-range plan includes expanding RWH to private lots and facilities, motivating the city to adopt RWH practices, advocating for additional measures such as use of permeable paving materials, which minimizes the amount of storm runoff.

GrowNYC was recognized by The New York State Department of Environmental Conservation (DEC) for Environmental Excellence in 2006. GrowNYC was honored for promoting sustainable rainwater harvesting practices in New York City's community gardens and green spaces. GrowNYC's Lenny Librizzi and Lars Chellberg have been key figures in the Water Resources Group.

GrowNYC is the also recipient of the 2010 EPA Environmental Quality Award for its organization-wide efforts, including rainwater harvesting. GrowNYC's efforts divert approximately 1,000,000 gallons of rainwater each year. The RWH project began in 2001 when faced with a drought that summer where gardener access to hydrants was restricted, GrowNYC and the NYC Parks Department's GreenThumb founded the Water Resources Group to promote and fine-tune the idea of water conservation. In New York State, GrowNYC, (then Council on the Environment of NYC and as part of the Water Resources Group) has taken a leading role in promoting this sustainable practice. The long-range plan includes expanding RWH to schools as well as private lots and facilities, motivating the city to adopt RWH practices, advocating for additional measures such as use of permeable paving materials, which minimizes the amount of storm runoff.

Our partner organization, Brotherhood Sister Sol, was established in 1995 to offer supportive programs for youth in impoverished communities. The organization grew from this beginning into what it is today: a comprehensive and holistic youth development organization that provides intensive, long-term services to their members.

The results of this holistic approach speak to the success of their organizational model. They have documented outcomes that far surpass New York City numbers: Harlem's teen pregnancy rate is 15% - their members have a rate of less than 2%. In NYC, the high school graduation rate of 61%, but the Schott Foundation found that the graduation rate of Black and Latino boys is 34%. Over 40% of Black men between the ages of 18-65 in New York City are unemployed. At BHSS, 88% of their alumni have graduated from high school, and 94% have either graduated from high school or earned their GED. 95% are working full time or enrolled in college whereas the same general population in West Harlem, 18-25, has a 40% rate of either working full time or being enrolled in college.

IV. Project Description 25 points, 4-5 pages

GrowNYC will work with the youth program at Brotherhood Sister Sol, a Harlem based youth development organization, to 1) install appropriate decentralized rainwater harvesting systems in three community gardens, including the Frank White Community Garden, in order to reduce stormwater flows to the combined sewer system and localized flooding, 2) train youth partners, community gardeners, and volunteers in rainwater harvesting installation, and 3) educate the larger public through on-site educational signage paired with visible RWH systems in public spaces (community gardens).

GrowNYC will work in at least two of the following gardens. We are starting with a long list for assessment. Gardens may drop out due to a number of factors such as rainwater harvesting not being feasible or not being able to organize the gardeners in a timely fashion for this grant.

William A. Harris Garden
Hope Steven garden
Mo Pals
Serenity Garden

GrowNYC aims to install rainwater harvesting systems for the purpose of capturing stormwater that flows off rooftops. Appropriate sized storage tanks from 300 gallons to 1,000 gallons or specialized space saving tanks will be installed based on roof size and space available in the garden.

Working with +/- 5 youth from Brotherhood Sister Sol we will begin by performing site visits to existing rainwater harvesting installations, including the Frank White Garden which is maintained by Brotherhood Sister Sol, to see what has been done and what needs to be done, as well as learn about use and hands on maintenance issues. At each garden we will perform a site assessment to determine location and possible access issues for gutters and downspouts and water tanks, overflow and winterizing, determining roof size, and determining possible uses for the harvested rainwater. We will also take this opportunity to cover and basic tool safety and use. Based on our findings at the garden sites, we will begin the rainwater harvesting system design by determining material needs and water quality issues, sourcing materials, calculating potential rain capture capacity, and visiting a materials vendor. We will then work in small groups to determine and learn about labor needs for a rainwater harvesting system at a house or community garden, teaching how to calculate for cost and logistics. Following the theoretical and logistical training, we undertake the field installation of the first system, including collecting and transporting materials and tools and construction of the system by youth partners under GrowNYC supervision. All remaining systems will be repaired or constructed with guidance from GrowNYC minimal interference in order to solidify the skills and methods our participants have just learned.

This approach is designed to educate, empower, and enable the youth from Brotherhood Sister Sol in such a way that they can continue to employ these green infrastructure methods across their community, in addition to imparting a knowledge of general hands on labor, leadership skills, and a conservation stewardship ethic. Our students will learn skills that they can continue to use for years, and pass on to younger students and community volunteers. Furthermore, permanent signage at the garden sites, as well as an online database, will be available for community members, encouraging them to build rainwater capture systems on their own space, such as a back yard or another community garden.

Underscoring the priories of the Clean Water Act, our project goals are:

1. Prevent pollution by reducing rainwater volumes flowing to the combined sewer system via diverting flows from rooftops of buildings or structures in or adjacent to community gardens before they enter the system.

2. Provide residents with a tangible way to prevent water pollution; encourage community participation in installation.

3. Train others in order to foster increased rainwater harvesting projects in New York City and beyond.

4. Create visible projects, online tutorials and educational signage that illustrate the connection between rainwater runoff and water pollution.

GrowNYC staff will provide each garden with maintenance instruction and help (such as how to close down in winter and re-open in spring). At the start of the program, an appropriate representative at each site will be asked to sign a maintenance agreement that will indicate their commitment to receive training, house the system and, properly maintain the system, and to the extent possible serve as spokespeople for the benefits of rainwater harvesting. GrowNYC staff will train youth to do this work themselves, but our staff will also be available to provide maintenance assistance and advice on an as needed basis for each site.

Our comprehensive 10-15 training sessions with youth and young adults from Brotherhood-Sister Sol will cover: history, background, formulas to calculate potential water capture and tank sizing, design and installation of rainwater harvesting systems. Certain science concepts such as erosion, soil compaction, infiltration, porosity, permeability, the water cycle, etc. will be incorporated into training. Everyone that participates in training will be asked to fill out a pre- and post survey that gauges the efficacy of the training.

Other Educational Outreach Efforts

Prominent signage at each site will provide visibility and education for garden visitors throughout the year. Community gardens with RWH collection systems serve as educational and promotional tools for garden visitors. A sturdy metal sign outlining the use/benefits of rainwater harvesting will be highly visible in each garden: fostering the duplication of RWH is one of the best ways to prevent water pollution and increase the amount of water available for human use.

After completing installations, GrowNYC will feature the project in an official press release, our website (+/- 183,000 hits/month), on Facebook (21,700 likes), and in an e-newsletter.

We are confident that our efforts will result in the increase of rainwater harvesting systems as the everyday way New Yorkers can employ to prevent pollution.

ii) A concise description of how the organization and its partner(s) will work together during the year to address the local issue(s).

As mentioned above, GrowNYC will partner with the Brotherhood Sister Sol, who will identify qualified candidates from their youth programs to join our project, provide day to day supervision, and assist with outreach to the community. Founded in 1995, The Brotherhood/Sister Sol (Bro/Sis) provides comprehensive, holistic and long-term support services to youth who range in age from eight to twenty-two. Bro/Sis offers wrap around evidence-based programming. The organization focuses on issues such as leadership development and educational achievement, sexual responsibility, sexism and misogyny, political education and social justice, Pan-African and Latino history, and global awareness.

For well over a decade, The Brotherhood-Sister Sol has been actively engaged in the urban gardening & farming movement. They are the caretakers of the Frank White Memorial Garden located adjacent to their headquarters and have been responsible for developing the 7,000 sq/ft lot into a Environmental Learning Center that includes a functional Urban Farm (producing more than 20 varieties of fruits and vegetables), a Green House, a Group Challenge Course, as well as recreational seating and performing areas. All of these features have been co-designed and constructed by youth members and local community residents.

The Brotherhood Sister Sol plans to work with the youth trained by GrowNYC to continue offering rainwater harvesting construction, maintenance, and guidance services to area residents, and to train younger students as they reach an appropriate age, and GrowNYC will continue to offer advisory support to the Bro/Sis indefinitely.

V. Organizational Capacity and Programmatic Capability 8 points, ½ page

GrowNYC uses QuickBooks software to manage our financials in accordance with Generally Accepted Accounting Principles. An audit committee of the Board is responsible for oversight and evaluation of all aspects of financial management, and this committee reports back to the Board with its findings and recommendations on a regular basis. In addition, after several years of continued growth, GrowNYC is currently in the process of upgrading its IT infrastructure to incorporate more robust data backup/redundancy policies, as well as enhanced security for rapidly increasing amounts of digital information. Additionally, GrowNYC is a member in good standing of the NYS Philanthropic Advisory Service (the charity wing of the BBB), silver level GuideStar participant, and a four-star Charity Navigator member.

GrowNYC has the experience necessary to undertake this project and looks forward to supporting the EPA's goals as well as its own local priorities. We have successfully completed numerous government grants from EPA and the City of New York Dept of Parks GreenThumb along with private funding to install and monitor rainwater harvesting systems and offer workshops, internships and training.

Past Reporting History

For the following federal grants, all report have been submitted on time and accepted, and all proposal objectives were addressed and reported on, or are currently being addressed. If the contract is still active, we are currently in good standing with the funding agency.

1. Greenmarket - Farm Beginnings - Multicultural Farmers
Amount: $562,103 from United States Department of Agriculture
Dates: 9/1/12-8/31/15
2012-49400-19584
Jill Auburn

2. Greenmarket and Wholesale Greenmarket – Farmer Market Promotion Program
Amount: $83,045 from United States Department of Agriculture
Date - 9/30/2011 - 9/30/2013
12-25-G-1395
A.Lee Cliburn

3. Greenmarket - Organic Agriculture Research and Extension Initiative (OREI)
Amount: $125,505 from United States Department of Agriculture
Dates - 9/1/2012 - 8/31/2015
Subward No.: 64325-9838, Prime Agreement No.: 2011-51300-30697

4. Greenmarket - Community Food Projects Competitive Grants Program (CFP)
Amount $268,601 from United States Department of Agriculture
Dates - 8/1/13-7/31/16
2013-33800-20879
Janet Schmidt

5. Greenmarket Co. - Local Food Promotion Program (LFPP)
Amount - $100,000 from United States Department of Agriculture
Dates - 9/30/14 - 9/29/16
14-LFPPX-NY-0131
Velma Lakins

Of note: in 2006 GrowNYC was awarded and successfully administered a rainwater harvesting grant from the E.P.A, Because the grant activities took place over five years ago, it has not been included in this list. Lenny Librizzi was also responsible for overseeing the 2006 grant.

VI. Qualifications of the Project Manager (PM) 10 points, 1 page

The project will be led by Lenny Librizzi, Assistant Director of our Greening program. Lenny is the Assistant Director of the Open Space Greening Program at GrowNYC, formerly the Council on the Environment of New York City. He brings his 28 years of experience working in

community gardens and play spaces and his relationships with numerous stakeholders in the greening community to his varied projects.

He has developed and taught horticultural and other environmental workshops and courses for diverse populations including youth, the homeless, seniors and community gardeners. He has taught classes and workshops on Citizen Street Tree Care, Open Space GIS, Green Infrastructure, Water Conservation, Storm Water Management and Rainwater Harvesting, Composting, Soils and other garden and open space topics.

He was a Scientist in Residence at the Brooklyn Children's Museum where he created a natural science summer workshop for teenagers. He collaborated in the creation and teaches the gardening component of the Learn it Grow it Eat it Project, an environmental education/ community gardening program working with 200 high school students each year in the Bronx and Manhattan to improve their understanding of the environmental impacts of the food we eat while working to improve food access in the community.

He created and managed all aspects of the Community Garden Mapping Project, a GIS map and catalog of open spaces in New York City neighborhoods which included a 3 year summer youth project. His efforts led to the creation of the Water Resources Group dedicated to water conservation and pollution prevention through education about, and the installation of, rainwater harvesting systems. He has trained an estimated 300 individuals in the last two years how to build rainwater harvesting systems and other stormwater management techniques including bioswales and rain gardens and is responsible for leading or assisting in building over 100 rainwater harvesting systems, collecting approximately 1,250,000 gallons of water each year.

Lenny served for six years as Board Member and Publications chair of the American Community Gardening Association, a national nonprofit membership organization of professionals, volunteers and supporters of community greening in urban and rural communities. An important aspect of his work is to support and encourage Community Gardening research.

He has published articles in a number of newsletters, print and on-line journals and conference proceedings and has been interviewed for scholarly research, print articles and on-line, radio and TV reports. He writes about Community Gardening and sustainability in his Community Gardening Blog http://commmunitygardening.blogspot.com/ .Lenny worked with youth at Brotherhood-Sister Sol to install a 50 gallon barrel on a gazebo in 2013. He also worked with the Parks Department's Green Apple Corps to install a rainwater system at the William T. Harris garden in West Harlem in 2009.

VII. Past Performance in Reporting on Outputs and Outcomes 5 points, ½ page

Doris Duke Charitable Foundation #2013002
Rebuild ten community gardens that were heavily impacted by Superstorm Sandy, including three RHS
$100,000, Awarded January 2013

Provided an interim and final report, including financial as requested by the funder. Project was fully executed as outlined in the proposal and all funds were expended.
Andrew Bowman

NYSP2I – 35055-CGP-03
New York State Pollution Prevention Institute 2012-2013 Community Grants Program
$16,000 December 1, 2013 - May 31, 2013
Provided quarterly reports, including financial as requested by the funder. Project was fully executed as outlined in the proposal and all funds were expended.
Kathleen Kosciolek

Altman Foundation
General support for green spaces and community gardens
$35,000, last grant made on February 28, 2014
Provided a final report as requested by the funder. Project was fully executed as outlined in the proposal and all funds were expended.
Deborah Velazquez

Obesity Task Force, NYC Parks Department - CT1-846-20131420435
Built and repaired five gardens across the city.
$74,844, 4/13 – 6/13
Provided an interim and final report, including financial as requested by the funder. Project was fully executed as outlined in the proposal.
Winsome Miles

North Star Fund – Greening Western Queens
Built ten school gardens and one large community gardens.
$160,000, Fall 2011-2013
Provided progress reports and a final report as requested by the funder. Project was fully executed as outlined in the proposal and all funds were expended.
Cori Parish